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(12) United States Patent Zhou et al.

(54) PAPER-BASED CHEMICAL ASSAY DEVICES

WITH IMPROVED FLUIDIC STRUCTURES

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See application file for complete search history.

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(57) ABSTRACT

A chemical assay device includes a hydrophilic substrate and one or more hydrophobic structures that extend from a first side of the hydrophilic substrate to a second side of the hydrophilic substrate. A hydrophobic structure in the hydrophilic substrate forms a fluid barrier wall that extends from the first side of the hydrophilic substrate to the second side of the hydrophilic substrate with a deviation of less than 20° from a perpendicular axis between the first side and the second side. The hydrophobic structure is formed from a wax or a phase change ink.

8 Claims, 10 Drawing Sheets

